

CLAIM AMENDMENTS

Cancel claims 10, 13, 15, 26 and 27 without prejudice;

Rewrite claims 1, 14, 25 and 28 as follows:

Add the following new claims 29-40.

1. (Currently Amended) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated cylindrical internal flow passage ~~the nozzle body including~~ and having an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall, and

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having an elongated generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, said discharge orifice having a long axis oriented in a plane perpendicular to a long axis of said elongated internal flow passage.

2. (Original) The spray nozzle according to claim 1 further including a hood extending outward from an outside surface of the side wall of the nozzle body and extending around at least a portion of the discharge orifice.

3. (Original) The spray nozzle according to claim 2 wherein the hood extends outward a greater distance from the outside surface of the side wall of the nozzle body near an upper edge of the discharge orifice than near the lower edge of the discharge orifice.

4. (Original) The spray nozzle according to claim 3 wherein the distance the hood extends outward from the outside surface of the side wall of the nozzle body gradually increases as the hood extends from adjacent a lower edge of the discharge orifice to adjacent an upper edge of the discharge orifice.

5. (Original) The spray nozzle according to claim 1 further including a pre-orifice member arranged in the internal flow passage of the nozzle body upstream of the discharge orifice, the pre-orifice member defining a pre-orifice that is relatively smaller area than the cross-sectional area of the internal flow passage and through which fluid passes prior to reaching the discharge orifice.

6. (Original) The spray nozzle according to claim 5 wherein the pre-orifice member comprises an insert that is arranged in the internal flow passage of the nozzle body.

7. (Original) The spray nozzle according to claim 1 wherein the upper portion of the discharge orifice has a generally cylindrical configuration.

8. (Original) The spray nozzle according to claim 7 wherein the lower portion of the discharge orifice has a generally slot-like configuration.

9. (Original) The spray nozzle according to claim 8 further including a hood extending outward from an outside surface of the side wall of the nozzle body, the hood extending around the upper portion of the discharge orifice and along a pair of sides of the lower portion of the discharge orifice.

10. (Canceled)

11. (Original) The spray nozzle according to claim 1 wherein the upper portion of the discharge orifice defines an upper edge of the discharge orifice which is above a longitudinal axis of the internal flow passage of the nozzle body.

12. (Original) The spray nozzle according to claim 11 wherein the lower portion of the discharge orifice defines a lower edge of the discharge orifice that is adjacent a bottom of the internal flow passage of the nozzle body.

13. (Canceled)

14. (Currently Amended) The spray nozzle according to claim ~~13~~ 30 wherein the lower portion of the discharge orifice defines a lower edge of the discharge orifice that is above a bottom of the internal flow passage of the nozzle body.

15. (Canceled)

16. (Original) The spray nozzle according to claim 5 wherein the upper portion of the discharge orifice is generally cylindrical and the pre-orifice has a diameter that is approximately equal to the diameter of the upper portion of the discharge orifice.

17. (Original) The spray nozzle according to claim 5 wherein the lower portion of the discharge orifice has a generally slot-like configuration and the pre-orifice has a diameter that is approximately three times the width of the lower portion of the discharge orifice.

18. (Original) The spray nozzle according to claim 5 wherein the pre-orifice has a diameter and a center of the discharge orifice is located a distance of approximately one to two times the diameter of the pre-orifice from the pre-orifice.

19. (Original) The spray nozzle according to claim 5 wherein the pre-orifice has a diameter and the end wall of the nozzle body is located a distance of approximately three times the diameter of the pre-orifice from the pre-orifice.

20. (Original) The spray nozzle according to claim 2 wherein the hood at a highest point extends outward from the outside surface of the side wall of the nozzle body approximately one to two times a wall thickness of the nozzle body.

21. (Original) The spray nozzle according to claim 1 wherein the upper portion of the discharge orifice includes a pair of upwardly angled side walls that define an acute angle.

22. (Original) The spray nozzle according to claim 1 wherein an upstream end of the nozzle body is threaded.

23. (Original) The spray nozzle according to claim 1 wherein an upstream end of the nozzle body is configured with quick disconnect coupling.

24. (Original) The spray nozzle according to claim 8 wherein the upper and lower portions of the discharge orifice are joined by straight side walls.

25. (Currently Amended) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated internal flow passage, ~~the nozzle body including~~
and having an inlet end for connection to a pressurized liquid supply, a downstream end wall having a convex configuration and a side wall, and

a discharge orifice in the end wall of the nozzle body and communicating with the internal flow passage of the nozzle body, the discharge orifice having a an elongated generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, and said discharge orifice having a long axis oriented in a plane perpendicular to a long axis of said elongated internal flow passage.

26. (Canceled)

27. (Canceled)

28. (Currently Amended) The spray nozzle according to claim 27 33 further including an impingement surface supported in the internal passage of the nozzle body downstream of the pre-orifice and upstream of the discharge orifice.

29. (New) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated internal flow passage the nozzle body including an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall, and

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, said upper portion of said discharge orifice having a generally cylindrical configuration, said lower portion of said discharge orifice having a generally slot-like configuration, and said upper and lower portions of said discharge orifice being joined by curved side walls.

30. (New) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated internal flow passage the nozzle body including an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall, and

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, said upper portion of said discharge orifice defining an upper edge of the discharge orifice that angles downwardly.

31. (New) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated generally cylindrical internal flow passage the nozzle body including an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall,

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, and

a pre-orifice member arranged in the internal flow passage of the nozzle body upstream of the discharge orifice, said pre-orifice member defining a pre-orifice having a diameter that is less than one half of the diameter of the internal flow passage.

32. (New) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated internal flow passage the nozzle body including an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall,

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, and

a hood extending outward by from an outside surface of the nozzle body and around at least a portion of the discharge orifice.

33. (New) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated internal flow passage the nozzle body including an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall, and

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, and

a pre-orifice member arranged in the internal flow passage of the nozzle body upstream of the discharge orifice, and said pre-orifice member defining a pre-orifice that is relatively smaller in area than the cross-sectional area of the internal flow passage and through which fluid passes prior to reaching the discharge orifice.

34. (New) A spray nozzle for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain, the nozzle comprising:

a nozzle body defining an elongated internal flow passage, the nozzle body including an inlet end for connection to a pressurized liquid supply, a downstream end wall and a side wall, and

a discharge orifice in the side wall of the nozzle body arranged between the inlet end and the downstream end wall and communicating with the internal flow passage of the nozzle body, the discharge orifice having a generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion, and

a pre-orifice member arranged in the internal flow passage of the nozzle body upstream of the discharge orifice, said pre-orifice member defining a pre-orifice that is relatively smaller in area than the cross-sectional area of the internal flow passage and through which fluid passes prior to reaching the discharge orifice.

35. (New) A spraying system for directing a wide lateral spray curtain with substantially uniform liquid distribution throughout the length of the spray curtain comprising a motorized tractor for movement along a spraying path, a pressurized supply of liquid to be

sprayed carried by said tractor, at least one spray nozzle supported by said tractor, said spray nozzle having a nozzle body defining an elongated internal flow passage and having an inlet end for connection to said liquid supply, and a discharge orifice formed in a wall of said nozzle body communicating with said internal flow passage, said discharge orifice having a generally inverted teardrop configuration comprising a relatively larger area upper portion and a relatively smaller area lower portion arranged below the upper portion for directing liquid outwardly of said tractor during movement along a spraying path.

36. (New) The spraying system of claim 35 in which said nozzle body includes a side wall and an end wall, and said discharge orifice being formed in said side wall.

37. (New) The spraying system of claim 36 in which said side wall has a cylindrical configuration, and said discharge orifice is located in upstream spaced relation to said end wall.

38. (New) The spraying system of claim 35 in which said nozzle body includes a sidewall and an end wall, and said discharge orifice is formed in said end wall.

39. (New) The spraying system of claim 35 including a second spray nozzle identical to said at least one spray nozzle mounted on said tractor for directing a spray curtain in a direction different from the spray curtain directed from said at least one spray nozzle.

40. (New) The spraying system of claim 39 which said at least one spray nozzle directs a lateral spray curtain to one side of the spraying path of movement of said tractor, and said second spray nozzle directs a lateral spray curtain to an opposite lateral side to the spraying path of movement of said tractor.